

REMARKS

This timely responds the Office Action mailed April 23, 2003. Claims 4, 5, 14-17 and 21 are active in this application, of which claims 4 and 14 are independent. Based on the above Amendments and the following Remarks, Applicants respectfully request that the Examiner reconsider the outstanding rejections and they be withdrawn.

Rejections Under 35 U.S.C. §103

In the Office Action, claims 4 and 5 have been rejected under 35 U.S.C. §103(a) for being unpatentable over Japanese Patent Publication No. 8-254680 by Kubo, *et al.* ("Kubo") in view of U. S. Patent No. 6,219,125 B1 issued to Ishikawa, *et al.* ("Ishikawa") and U. S. Patent No. 6,486,494 B2 issued to Jeong, *et al.* ("Jeong"). This rejection is respectfully traversed.

First, the present application was filed on November 20, 1998 as claiming priority from the corresponding Korean patent application No. 97-61315 filed on November 20, 1997. The features in Figs. 9a, 9b and 10 of Jeong were first disclosed in Figs. 24A, 24B and 25 of its prior Application No. 09/301,445 filed on February 26, 1998, now granted as U. S. Patent No. 6,081,308. Thus, the priority date of the present invention antedates the filing date of U. S. Patent No. 6,081,308 that featured an ITO layer 810 contacting a gate pad 220 for the first time. For this reason, Jeong does not qualify as prior art under 35 U.S.C. §103(a).

Second, page 2, lines 13-17 of the specification describes

"when an ITO layer is etched by using an etchant, hydrochloric acid and nitric acid are used. However, it may happen that the etchant penetrates the passivation layer, contacts the data wire and the gate pad. Accordingly, the data wire and the gate pad may be disconnected and/or eroded".

To solve this problem, the present invention discloses a supplementary layer that is formed entirely on or under the data wire and/or the gate wire. The supplementary layer is made of either nitride or metal alloy nitride. Regarding the function of the supplementary layer, the specification further discloses, in page 4, line 19 to page 5, line 4,

“Here, the etchant for the ITO layer comprises hydrochloric acid and nitric acid, which may penetrate along the crack of the passivation layer 600 or along the edges of the ITO wire 700 and 701, and the may reach the data wire 500, 510 and 520, and the gate pad 230.

However, because of the supplementary gate wire 250 and the supplementary data wire 550 have a low chemical reaction against ITO etchant, the gate wire 200, 210 and 230, and the data wire 500, 510 and 520 though the supplementary gate wire 250 and the supplementary data wire 550 are not disconnected”

Thus, the present invention is directed to protecting the data wire and the gate pad when an ITO layer is etched by using hydrochloric acid and nitric acid.

In this regard, Kubo is directed to lowing wiring resistance and increasing production yield of scanning lines Yn-1. However, Kubo’s disclosure is distant from protecting data wire or gate wire from the etchant (hydrochloric acid and nitric acid) that is used to etch an ITO layer. Ishikawa discloses an electrode plate, which is neither data wire nor gate wire, on or under which a metal, metal alloy or metal nitride layer is formed. However, Ishikawa is not directed to protecting data wire or gate wire from the etchant (hydrochloric acid and nitric acid) that is used to etch an ITO layer. Neither Kubo nor Ishikawa is directed to protecting data wire or gate wire from the etchant (hydrochloric acid and nitric acid) used for patterning an ITO layer.

Thus, there is no motivation to combine these recited references to protect data wire or gate wire from the ITO layer etchant. It appears that the Examiner is benefiting from hindsight

vision afforded by the claimed invention. However, it is well known that the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.

Hodosh v. Block Drug Co., 786 F.2d 1136, 1143 n.5, 229 USPQ182, 187 n.5 (Fed. Cir. 1986).

Since there is no motivation to combine these references, it is submitted that claim 4 is patentable. Claim 5 that is dependent from claim 4 would be also patentable at least for the same reason. Accordingly, Applicants respectfully request that the rejection over claims 4 and 5 be withdrawn.

In the Office Action, claims 14-17 and 21 have been rejected under 35 U.S.C. §103(a) for being unpatentable over Applicants Admitted Prior Art (AAPA) in view of Kubo and further in view of Ishikawa. This rejection is respectfully traversed.

Independent claim 14 recites "a supplementary data wire located either on or under the entire data wire and made of either metal nitride or metal alloy ". In this regard, the Examiner admitted that AAPA "does not expressly disclose ... a supplementary wire is located either on or under the entire data wire and made of either metal nitride or metal alloy nitride".

As previously mentioned, neither Kubo nor Ishikawa is directed to protecting data wire or gate wire from the etchant (hydrochloric acid and nitric acid) used for patterning an ITO layer. Thus, there is no motivation to combine these recited references to protect data wire or gate wire from the ITO layer etchant.

It appears that the Examiner is benefiting from hindsight vision afforded by the claimed invention. However, as previously mentioned, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. Since there is no motivation to combine these references, it is submitted that claim 14 is patentable. Claims 15-17 and 21 that

are dependent from claim 14 would be also patentable at least for the same reason. Accordingly, Applicants respectfully request that the rejection over claims 14-17 and 21 be withdrawn.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, claims 4, 5, 14-17 and 21 are in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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